

ABSTRACT

Disposable units in current use for performing PCR are limited by their heat block ramping rates and by the thermal diffusion delay time through the plastic wall as well as by the sample itself. This limitation has been overcome by forming a disposable plastic chip using a simple deformation process wherein one or more plastic sheets are caused, through hydrostatic pressure, to conform to the surface of a suitable mold. After a given disposable chip has been filled with liquid samples, it is brought into close contact with an array of heating blocks that seals each sample within its own chamber, allowing each sample to then be heat treated as desired.